Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

train pulled up by means of a rope. The additional engine would occasion much additional expense, for the hands supplying it would always be preserved, and the men should be paid their wages whether wanting or not. The use of the rope would occasion an enormous waste of power, and he would mention the instance of a place where an ascent of one foot to one hundred and six occurred. The rope had to be five miles long, and its weight was sixty thousand pounds. He next referred to one point, on which he seemed to consider that engines generally were at variance with what was correct. He contended that the heat of the fire is directly proportional to the quantity of the steam allowed to escape in a definite time into the flue, and consequently that half the number of blasts of steam projected into the chimney in an engine going up a hill, would have the same effect in exciting the fire as double the number of blasts of half the condensation, when the engine was running on a level plane. He would merely add one or two words on the effect of curves. The centrifugal force gives a tendency to fly from the centre, and the flange being pressed against the rails produces friction. The flange pressed out against the rails causes it to strike against them, and either the rails are injured, or the wheel goes over them. The learned lecturer, after adverting to the abrupt curve at the termination of the Kingstown railway, the radius being not more than half a mile, concluded by saying, that in any case it would be most essential to avoid having any curves at the termination of a descent.

Mr. Vignoles, in reply to Dr. Lardner's remarks on the curves and inclines on railways, and particularly as to the curve on the Dublin and Kingstown railway between Seapoint and Salt-hill, gave instances of curves of much shorter radius than the curve at Salt-hill having been travelled over at high velocities for several years without accident; and Mr. Vignoles trusted, the actual results of experience would relieve the apprehensions which the fair auditors of the discussion might entertain for their safety, when next they trusted themselves on the Kingstown railway. He mentioned the junction-curve from the St. Helen's railway, on to the Liverpool and Manchester railway, near the twelve-mile post, at the foot of the Sutton inclined plane, which had a radius of only 200 yards on a gradient of one in two hundred. The curve on the junctions of the North Union railway from Preston and Wigan, with the Liverpool and Manchester railway, near the seventeen-mile post on that line, not far from Parkside-bridge, where Mr. Huskisson was killed, was drawn with a radius of about 550 yards, and had a gradient of 1 in 377; and on this curve the railway trains had travelled daily for three years at high velocities, not only without accident, but without having sensibly put the rails out of guage; that is, that the original parallelism of the rails had not been materially or sensibly affected. He also mentioned—in opposition to Dr. Lardner's remark, that the climax of danger was to be apprehended from a curve immediately commenced at the foot of an inclined plane—that on the Runcorn-Gap railway, he had frequently ran down the self-acting plane with several waggons, without breaks, at the highest velocities, and without accident. The plane was graduated 1 in 36; and at the foot a curve begins with a radius very little more than the radius of the Salt-hill curve on the Dublin and Kingstown railway, and with a gradient of 1 in 330—and down this inclined plane the coal waggons continually ran without accident. He then proceeded to state that the curve near Salt-hill was described with a radius of about half a mile, or 880 yards, and was on a horizontal or dead level for the principal part of its length, and on a gradient of 1 in 400 for the remainder. He took occasion to remind Dr. Lardner, that it was extremely easy to counteract the effects of the centrifugal force acting on trains passing along curves at high velocities, by elevating the outer or convex side of the railway; and that the maximum or even the average velocity being assumed, and the radius of the curve, or rather (as Mr. Vignoles observed from a more correct expression furnished by Mr. Cubitt, to the Institution of Civil Engineers,) the radius of the curvilineal motion of the centre of gravity of the locomotive engine or load, being known, a very simple formula was obtainable, which gave the measure of the necessary elevation of the outer rail of the road above the inner rail, in order to counteract the effects of the centrifugal forces. He also produced a most interesting collection of papers on railways, embodied in the American Railroad Journal, a publication already extended to six respectable quarto volumes; and alluding to some great lines of projected railways through the States of New York, observed that the engineer of that work had rather prided himself on obtaining a route on which no elevation would be more than 100 feet in a mile (1 in 53), and no curve of a shorter radius than 100 yards. He concurred with Dr. Lardner, that it would be better that a railway should be straight and level, but he protested against the categorical conclusions of the learned professor, which, if strictly acted upon, would be prohibitory of many useful lines of railway in various countries. He then entered upon the question of the manner in which inclines should be introduced in railways, and contended from his own extensive experience, and from daily observations on the railways in operation, that the most desirable mode was to concentrate the steep inclinations, so that, by the help of an additional engine, the train might be got up with the same full load which the easier gradients on the other parts of the line would allow to be carried. He distinctly denied the assertion of Dr. Lardner, that whether the locomotive engines went at the rate of twenty or of ten, or even of five miles in an hour, the same quantity of steam was injected into the chimney in the same time, and thereby an equal draft created; for if Dr. Lardner's assertion were true, the steam pressure, which at the ordinary velocity of twenty miles an hour, was 50lbs. on the square inch of the piston above the atmospheric pressure, would have a pressure of 100lbs. per square inch when the velocity was reduced to ten miles an hour, and of 200lbs. per square inch when moving only at five miles an hour—which was a manifest absurdity.

## DISTRESSING CIRCUMSTANCE.

At Plymouth, in 1766, a marine soldier was sentenced to be shot for desertion. The marine companies and the fourth regiment were ordered to attend the execution. The prisoner was led from the barracks, attended by a clergyman, and escorted by an officer's guard, the coffin being carried before him. On his way to the field of execution, which was about a quarter of a mile distant, the unfortunate culprit often knelt down and prayed most fervently. Having reached the field, he was ordered to march round the troops to admonish them, the clergyman dictating what he said; after which he went back to his place. Nine men, who were formerly deserters, were appointed to shoot him. He knelt, and was desired by the officer to pull the cap over his face, which he did; and whilst the officer turned round, the soldier dropped his handkerchief, which was understood by those who were to fire, as a signal; and before the officer could prevent them, their pieces were discharged, and the unfortunate man had fallen, pierced by three balls. The officer had a reprieve for him, and while turning to take it from his pocket, the catastrophe happened.

## THE MAN IN THE MOON.

### A LEGEND.

Sir—As I observe in a recent number of your Journal, an account of some philosophers *having ascertained* to a *certainty* that the moon is inhabited, I beg to send you a metrical description of the manner in which the first inhabitant was sent there—at least this is the version of the story given in my part of the country.

*Duhallow.* E. W.

Through optic glass when sages view
The moon's deep vales, her fountains blue,
Her every stream and ocean—
Alas! how vainly proud, they try
To cheat each honest, vulgar eye
With many a wild-goose notion!